



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/626,882	07/27/2000	Andrew C. Gallagher	80992DMW	9650
1333	7590	04/19/2004	EXAMINER	
PATENT LEGAL STAFF EASTMAN KODAK COMPANY 343 STATE STREET ROCHESTER, NY 14650-2201			MILLER, RYAN J	
			ART UNIT	PAPER NUMBER
			2621	
			DATE MAILED: 04/19/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/626,882

Applicant(s)

GALLAGHER, ANDREW C.

Examiner

Ryan J. Miller

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-11,13-20,22-32 and 34-37 is/are rejected.
- 7) ☒ Claim(s) 3,12,21 and 33 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "40" has been used to designate both an F₁ grouper in the figure and a fit grouper in the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

2. The examiner requests a copy of the Jong-Sen Lee reference titled "Digital Image Enhancement and Noise Filtering by Use of Local Statistics" as cited on page 11, lines 14-16 of the specification. This reference is pertinent to the examination of this application. Full consideration of this prior art is essential.

Specification

3. The disclosure is objected to because of the following informalities: The examiner requests that the applicant update the status of application 09/293,197 first cited on page 2, line 13 and application 09/457,036 first cited on page 11, line 11.

Appropriate correction is required.

Claim Objections

4. The following quotation of 37 CFR § 1.75(a) is the basis of objection:

(a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

Art Unit: 2621

5. Claims 3-5, 12, 13, and 30 are objected to under 37 CFR § 1.75(a) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery.

Regarding claims 3 and 12, these claims recite the limitation "said derivatives" in line 5 of each claim. There is insufficient antecedent basis for this limitation in the claims. The examiner suggests changing this limitation to read, "said estimate of derivatives".

Regarding claims 4 and 13, these claims call for the limitation "a underexposure checker". This limitation is grammatically awkward. The examiner suggests changing this limitation to read, "an underexposure checker".

Regarding claims 5, the claim recites the limitation "said light falloff correction in lines 2-3. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Regarding claim 30, the claim calls for the limitation "processing said digital image in order to remove *large* edges" (emphasis added). However, the phrase "large edges" is indefinite. What constitutes a "large edge"? The specification merely describes that the image is smoothed to preserve edges (see applicant's specification: page 11, lines 6-17). The specification never clearly defines a "large edge". Clarification of this issue is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

Art Unit: 2621

international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, 5-7, 9-11, 14-16, 18-20, 23-26, 28, 29, 31, 32, 35, and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Kiriki et al. (U.S. Patent No. 6,219,446 B1).

As applied to claim 1, Kiriki et al. disclose a light falloff determining system comprising: a polar transformer that converts an image into radial traces (see 7B and column 5, lines 27-43: The reference describes that an image is converted by a chart as shown in Fig. 7B. As can be seen in Fig. 7B, this image has radial traces.); and a falloff fitter that fits said radial traces to a model of falloff to determine a light falloff amount for said image (see Fig. 8 and column 5, lines 39-43: The reference describes that the frame photographed by the user is compared with a reference image having density that is constant from the center to the periphery (i.e. model of falloff) by image processing means 5 (i.e. falloff fitter).).

As applied to claim 2, Kiriki et al. disclose that the discontinuity remover that removes discontinuities from said radial traces, thereby producing adjusted radial traces, wherein said falloff fitter fits said adjusted radial traces to said model of falloff to determine said light falloff correction for said image (see Fig. 7B: As can be seen in the figure, the radial traces are continuous. Furthermore, these are the radial traces that are fitted to the model of falloff).).

As applied to claim 5, Kiriki et al. disclose a falloff mask generator that generates a correction mask for said image based on said light falloff correction (see column 6, lines 40-50: The reference describes generating image correction data based on the marginal light quantity ratio (i.e. light falloff correction).).

As applied to claim 6, Kiriki et al. disclose a grouper that combines fit values used by said falloff fitter to fit said radial traces to said model (see column 6, lines 51-56: The reference

Art Unit: 2621

describes that an image processing means combines the image correction data with the image signals (i.e. radial traces).).

As applied to claim 7, Kiriki et al. disclose weighting unit that weights said fit values (see column 6, lines 51-56: The reference describes the use of image correction data. This data acts as a weight.).

As applied to claim 9, Kiriki et al. disclose that the polar transformer produces said radial traces from a group of images and said falloff fitter determines a single light falloff amount for said group of images (see column 6, lines 14-20: The reference describes obtaining images from a roll of film and performing correction determining a marginal light quantity ratio (i.e. light falloff amount) for the images.).

As applied to claim 10, Kiriki et al. discloses an image processing system comprising: an image collector (see Fig. 8: Reference numeral 1 referring to a first reading means for obtaining images.); and a light falloff correction system comprising a polar transformer that converts an image into radial traces; and a falloff fitter that fits said radial traces to a model of falloff to determine a light falloff correction for said image (see Fig. 7B, Fig. 8, and column 5, lines 27-43: The reference describes that an image is converted by a chart as shown in Fig. 7B. As can be seen in Fig. 7B, this image has radial traces. The reference further describes that the frame photographed by the user is compared with a reference image having density that is constant from the center to the periphery (i.e. model of falloff) by image processing means 5 (i.e. falloff fitter).).

As applied to claim 11, Kiriki et al. disclose that the discontinuity remover that removes discontinuities from said radial traces, thereby producing adjusted radial traces, wherein said

Art Unit: 2621

falloff fitter fits said adjusted radial traces to said model of falloff to determine said light falloff correction for said image (see the rejection of claim 2 above).

As applied to claim 14, Kiriki et al. disclose a falloff mask generator that generates a correction mask for said image based on said light falloff correction (see the rejection of claim 5 above).

As applied to claim 15, Kiriki et al. disclose a grouper that combines fit values used by said falloff fitter to fit said radial traces to said model (see the rejection of claim 6 above).

As applied to claim 16, Kiriki et al. disclose weighting unit that weights said fit values (see the rejection of claim 7 above).

As applied to claim 18, Kiriki et al. disclose that the polar transformer produces said radial traces from a group of images and said falloff fitter determines a single light falloff amount for said group of images (see the rejection of claim 9 above).

As applied to claims, 19, 20, 23-25, and 28, which merely call for the method performed by the system of claims 1, 2, 5-7, and 9, Kiriki et al. disclose such a method since the reference discloses the system for performing the method.

As applied to claim 26, Kiriki et al. disclose applying said light falloff correction to said image (see column 6, lines 51-56: The reference describes applying the image correction data to the image.).

As applied to claims 29, 31, 32, 35, and 37, which merely call for the method performed by the system of claims 10, 11, 14-16, and 18, Kiriki et al. disclose such a method since the reference discloses the system for performing the method.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4, 13, 22, and 34 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kiriki et al. (U.S. Patent No. 6,219,446 B1) and Tanaka et al. (U.S. Patent No. 6,693,673 B1). The arguments as to the relevance of Kiriki et al. in the rejection of claims 1, 10, 19, and 29 above are incorporated herein.

Claim 4, which is representative of claim 13, calls for an underexposure checker that prevents underexposed images from being processed.

Kiriki et al. does not disclose expressly an underexposure checker that prevents underexposed images from being processed.

Tanaka et al. disclose the use of an underexposure checker (see column 6, lines 32-33: The reference describes the use of an underexposure checker to determine whether or not the subject suffers from underexposure.).

Kiriki et al. and Tanaka et al. are combinable because they are from the same field of endeavor of image processing and the same problem solving area of image correction.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Kiriki et al. by adding the use of an underexposure checker as taught in Tanaka et al. because the use of such an underexposure checker allows the system to

Art Unit: 2621

“recognize that the subject suffers from underexposure” (see Tanaka et al.: column 6, lines 50-51). This gives the system the further ability of discarding a photograph having underexposure.

Therefore, it would have been obvious to combine Kiriki et al. with Tanaka et al. to obtain the invention as specified in claims 4 and 13.

As applied to claims 22 and 34, which merely call for the method performed by the system of claims 4 and 13, the combination of Kiriki et al. and Tanaka et al. disclose such a method since the combination discloses the system for performing the method.

10. Claims 8, 17, 27, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kiriki et al. (U.S. Patent No. 6,219,446 B1) and Silverbrook (U.S. Patent Application Publication No. US 2004/0032512 A1). The arguments as to the relevance of Kiriki et al. in the rejection of claims 1, 10, 19, and 29 above are incorporated herein.

Claim 8, which is representative of claim 17, calls for a flash fire detector that determines whether the image was obtained with a flash.

Kiriki et al. does not disclose expressly such a flash fire detector.

Silverbrook, however, discloses a flash fire detector (see paragraph [0019]: The reference describes a unit for determining if a flash was used when capturing the image.).

Kiriki et al. and Silverbrook are combinable because they are from the same field of endeavor of image processing and the same problem solving area of image correction.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Kiriki et al. by adding a flash fire detector that determines whether the image was obtained with a flash as taught in Silverbrook because the use of a flash

Art Unit: 2621

detection device allows the system to "correct for flash induced distortions" (see Silverbrook: paragraph [0002]).

Therefore, it would have been obvious to combine Kiriki et al. with Silverbrook to obtain the invention as specified in claims 8 and 17.

As applied to claims 27 and 36, which merely call for the method performed by the system of claims 8 and 17, the combination of Kiriki et al. and Silverbrook disclose such a method since the combination discloses the system for performing the method.

11. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kiriki et al. (U.S. Patent No. 6,219,446 B1) and Toyoda et al. (U.S. Patent No. 5,461,440 A). The arguments as to the relevance of Kiriki et al. in the rejection of claim 29 above are incorporated herein.

Claim 30 calls for processing the digital image in order to remove large edges.

Kiriki et al. does not disclose expressly processing the digital image in order to remove large edges.

Toyoda et al., however, discloses such a processing step (see column 8, lines 63-64: The reference describes that the image is smoothed (i.e. processing said digital image in order to remove large edges).).

Kiriki et al. and Toyoda et al. are combinable because they are from the same field of endeavor of image processing and the same problem solving area of image correction.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Kiriki et al. by processing the image to remove large edges as

Art Unit: 2621

taught in Toyoda et al. because the use of such a smoothing filter corrects for sharpness in the image thus yielding more accurate processing results (see Toyoda et al.: column 8, line 63).

Therefore, it would have been obvious to combine Kiriki et al. with Toyoda et al. to obtain the invention as specified in claim 30.

Allowable Subject Matter

12. Claims 3, 12, 21, and 33 would be allowable if rewritten to overcome the objection under 37 CFR § 1.75(a), set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gallagher et al. (U.S. Patent No. 6,670,988 B1) is pertinent in that the reference discloses a system compensates a digital image for light falloff.

Enomoto (U.S. Patent No. 6,323,934 B1) is pertinent in that the reference suggests the correcting an image in polar coordinates (see column 15, lines 7-8) for a decrease in the brightness of the edge of the image field (i.e. light falloff).

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan J. Miller whose telephone number is (703) 306-4142. The examiner can normally be reached on M-F 8:00-4:30.

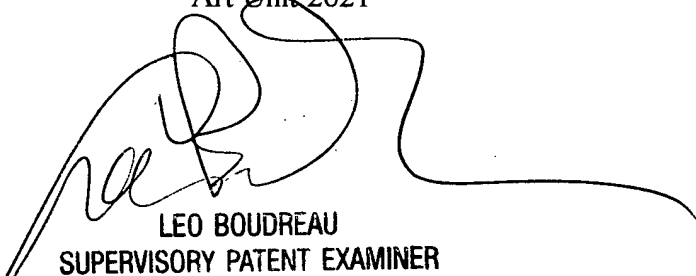
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2621

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ryan J. Miller

Ryan J. Miller
Examiner
Art Unit 2621


LEO BOUDREAU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600